

Mapping of site amplification factors in Morioka area by using observed S-wave velocity and geomorphological land classification

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We made up maps of the geomorphological land classifications and the site amplification factors in Morioka area, and compared them with seismic intensity map by questionnaire survey method. We first digitized the geomorphological land classification maps of Morioka and Hidume, Iwate Prefecture (1:50,000 scale) and constructed 250 m mesh data. At the northern Morioka area around Iwate Volcano, we classified the valley plain and gravel plateau area into small area in reference to the volcanic geological map by Doi(2000). Secondly, we measured average S-wave velocities at sites in Morioka area from dispersion curves of Rayleigh waves by using a microtremor array survey. Then, we made up the maps of site amplification factors using the empirical relation by Fujimoto and Midorikawa (2003). Finally, we compared the site amplification factors map with the seismic intensity map by questionnaire survey for 2003 Off-Miyagi earthquake. The two maps were similar in that strong motions were anticipated at the northern Morioka area.